Figure 1A+1B
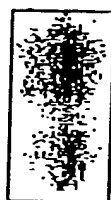
A. MCF-TR5-CD533

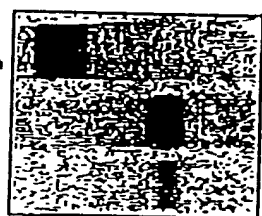mRNA   -   + Dox

35S-Metabolic Labeling
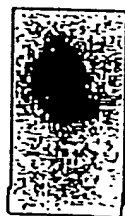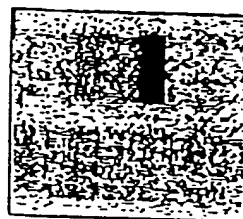
EGFR →

CD533 →

                    Lysate
                -    +
                    Dox

B. MDA-TR15-CD533
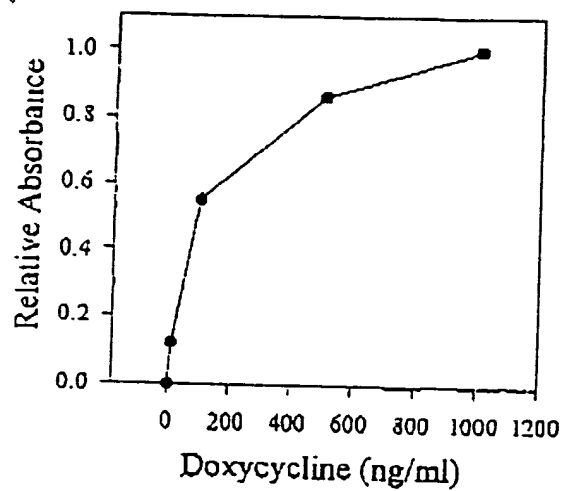
mRNA   -   + Dox

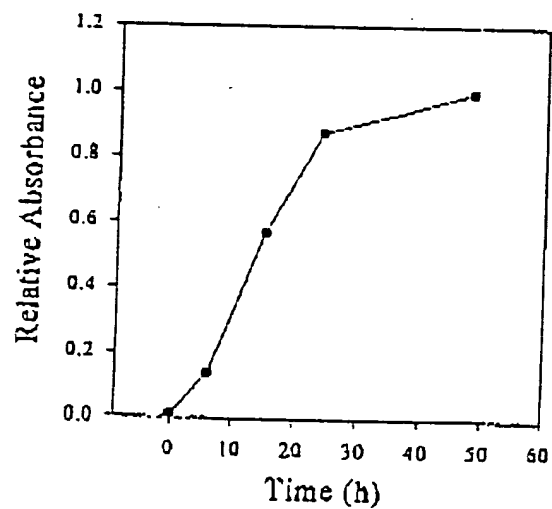35S-Metabolic Labeling
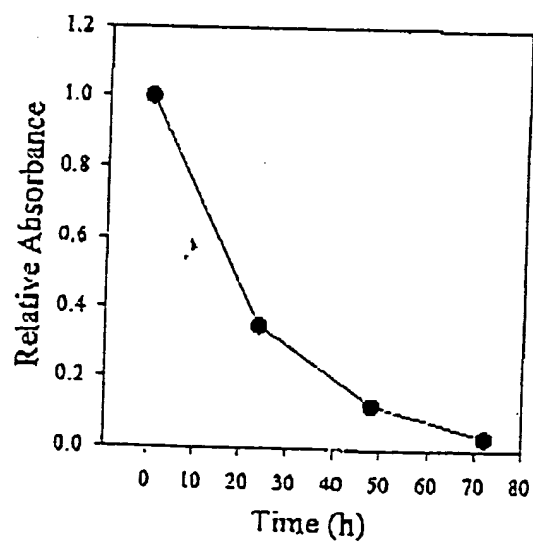
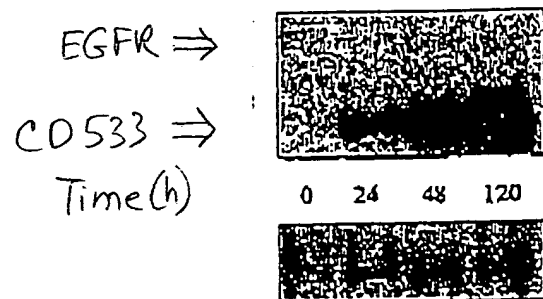EGFR →

CD533 →

                -    + Dox

Figure 2 A-C

A.

B.

C.

A. EGFR-WT/CD533

EGFR ⟹

CD533 ⟹

Time (h)   0   24   48   120

B. EGFR-WT "activated"

EGFR →

CD533 →

Time (h)   0   24   48   120

C. ErbB-2

erbB-2 →

Time (h)   0   24   48   120

Figure 4A-B

A.

EGFR →

B.

EGFR →

0 1' 2' 5' 10' 1' 5' 10'   0 1' 2' 5' 10' 1' 5' 10'
  Radiation   EGF   Radiation   EGF
          - Dox   + Dox
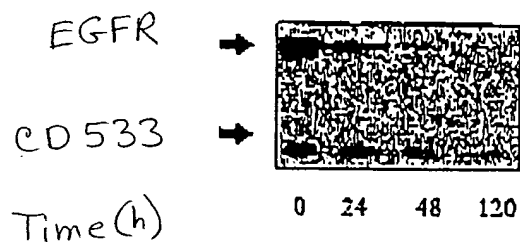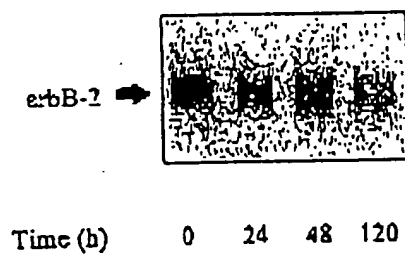
Figure 5 A-C
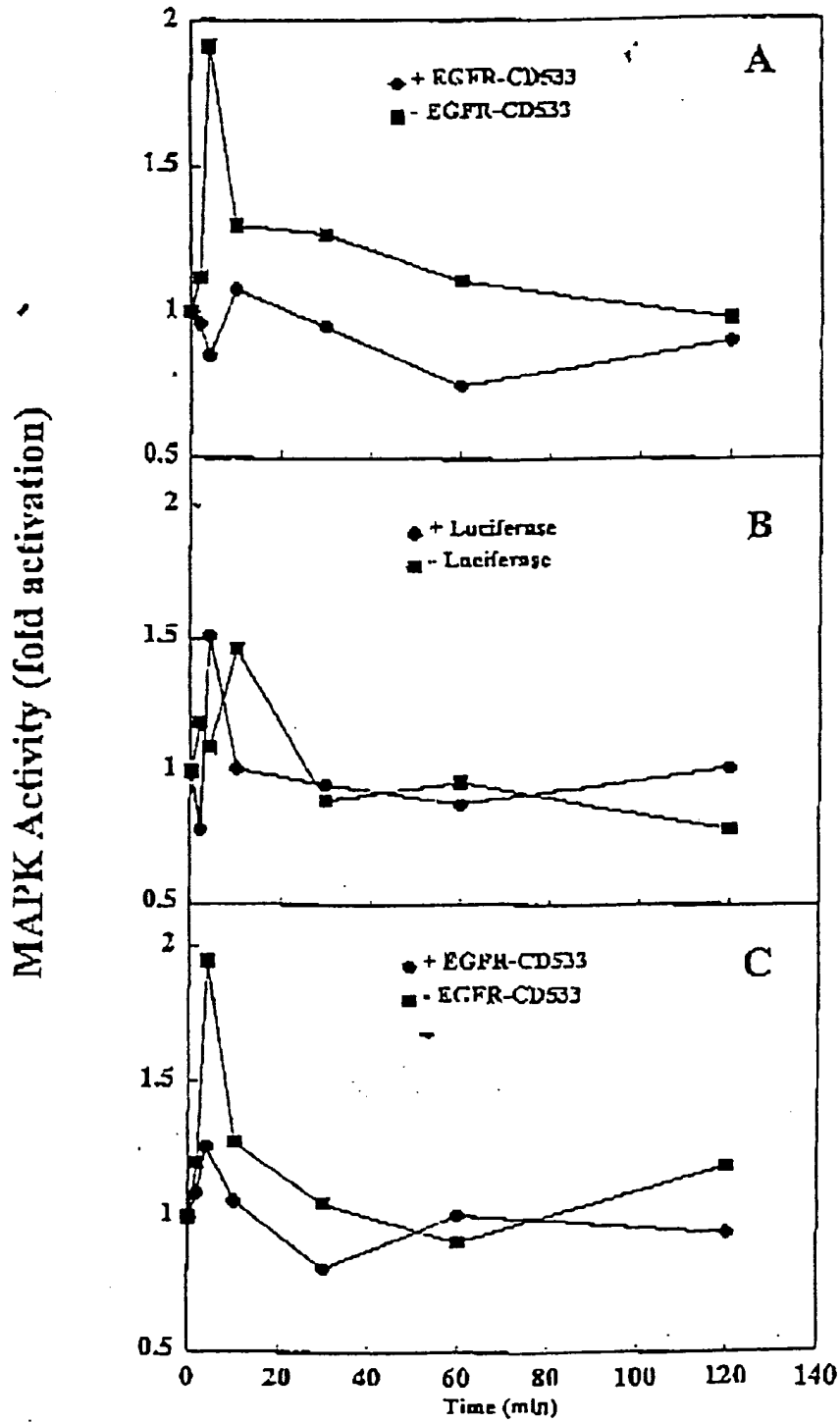
Repeated Radiation Exposure Growth Assay

24 h Dox	Radiation 2 Gy/day	Growth Assay Days 1, 4, 7
↓	↓↓↓↓↓	↓ ↓ ↓

Figure 7A-D

Figure 8 A-C
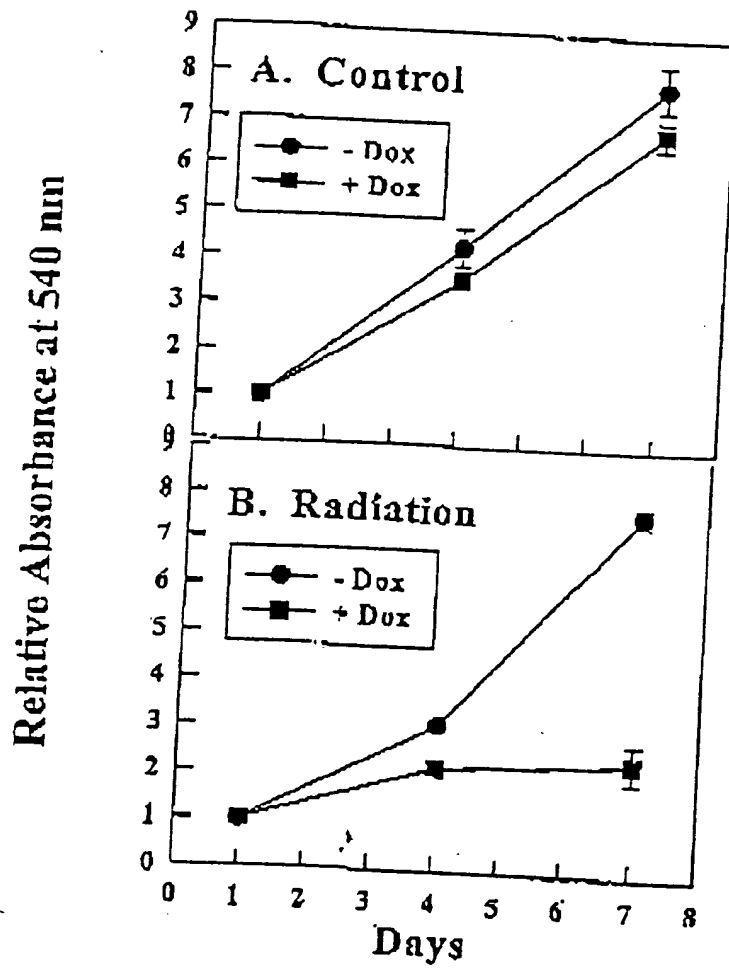
Figure 8 A-C
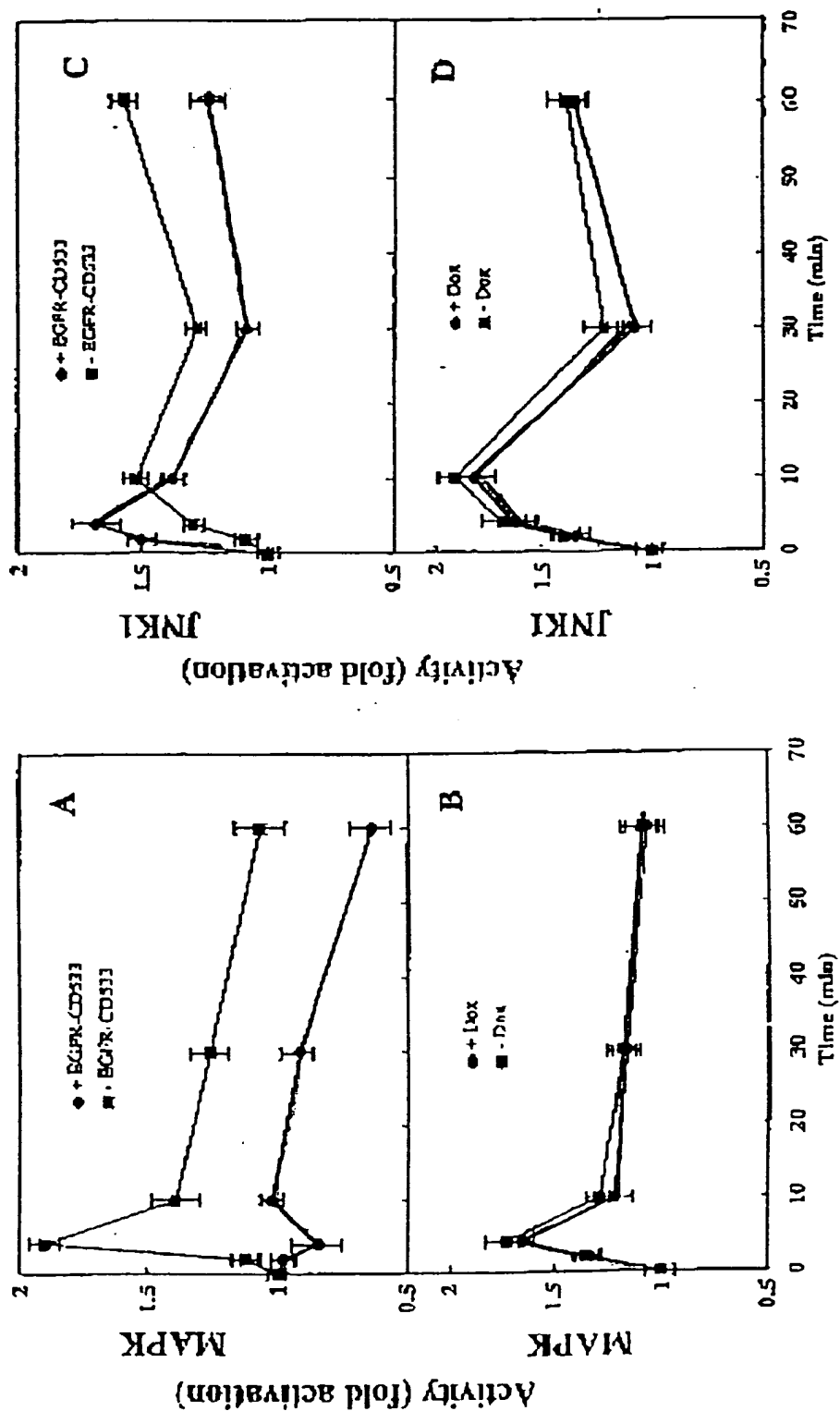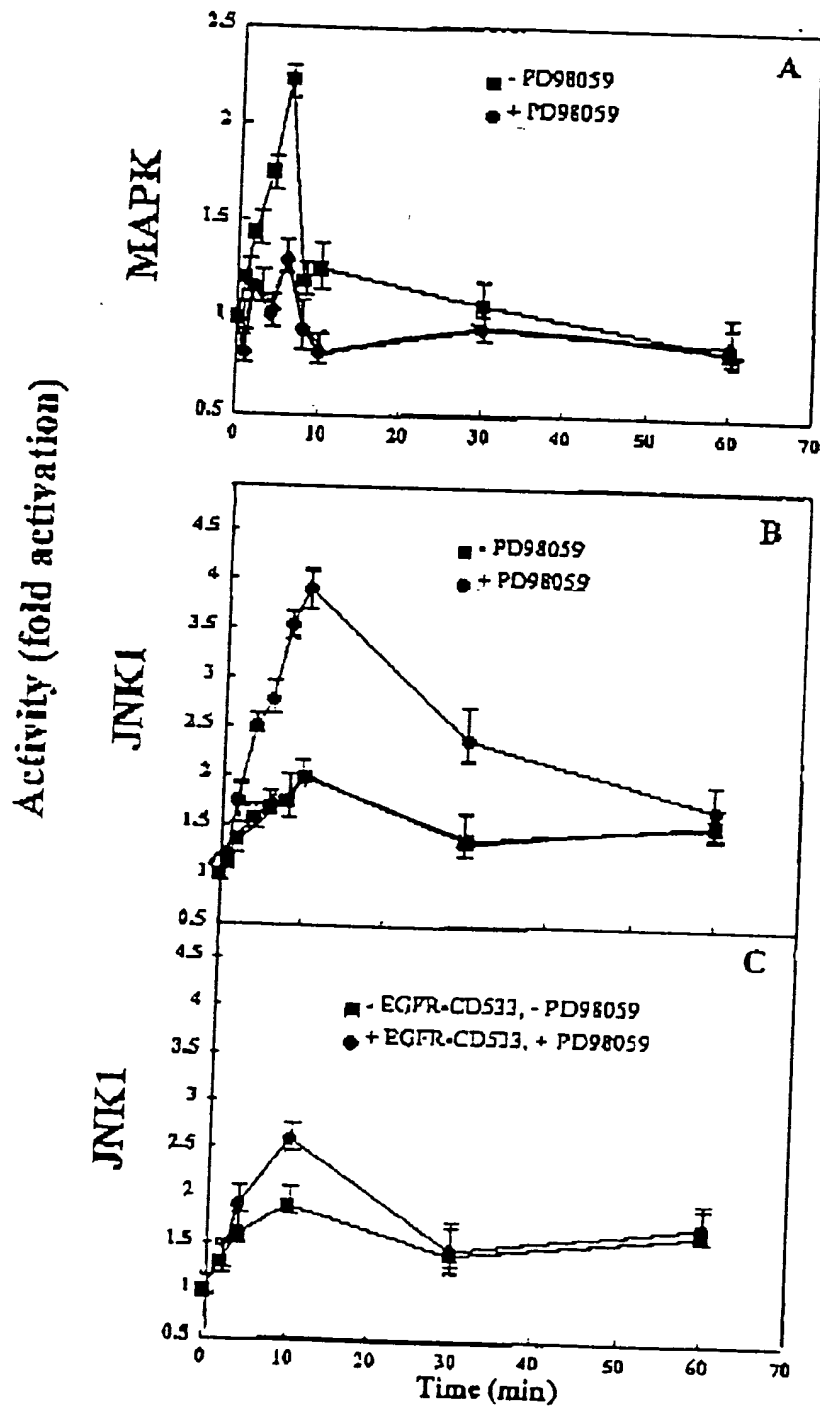
Figure A-C. MAPK and JNK1 activity (fold activation) over time.
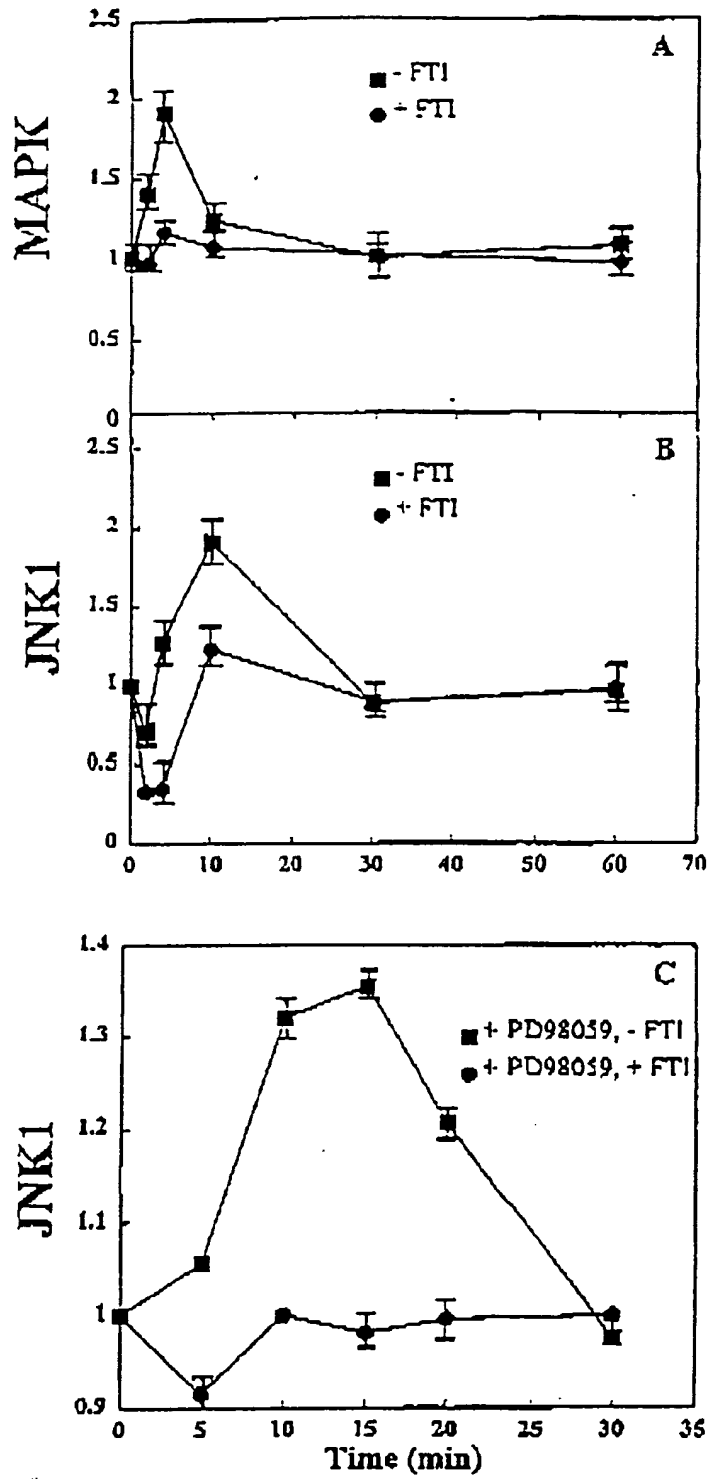
Figure 10 A-B

A

	Control							PD98059					
Time (min)	0	2	4	10	30	60		0	2	4	10	30	60

c-Jun →

Relative c-Jun protein level	1	0.7	0.6	0.7	1.2	1.3		0.4	0.3	0.3	0.3	0.5	0.6

B

c-Jun P-ser63 →

Relative c-Jun Ser 63 phosphorylation	1	0.4	0.6	5.6	17	3.9		0.4	1.2	4.8	12	16	6.6
Fold alteration in c-Jun Ser 63 phosphorylation relative to c-Jun protein	1	0.6	1	8	14	3		1	3	16	41	32	11

Figure 1 A-C

A

Percent Apoptosis
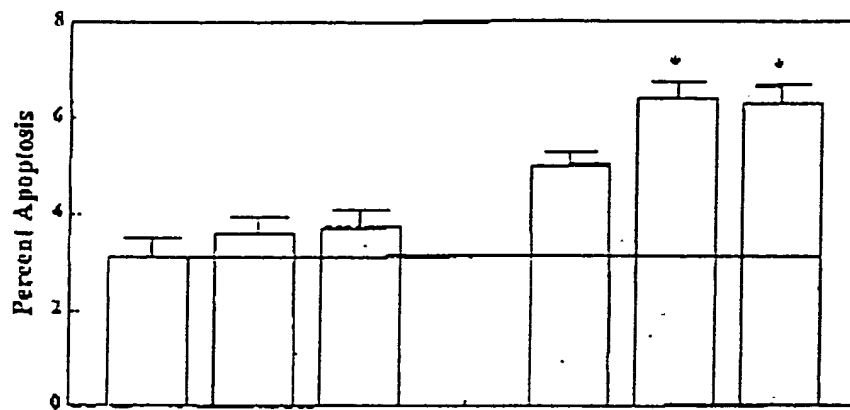
Irradiation	-	-	-	+	+	+
EGFR-CD533	-	+	-	-	+	-
PD98059	-	-	+	-	-	+

B

Percent Apoptosis
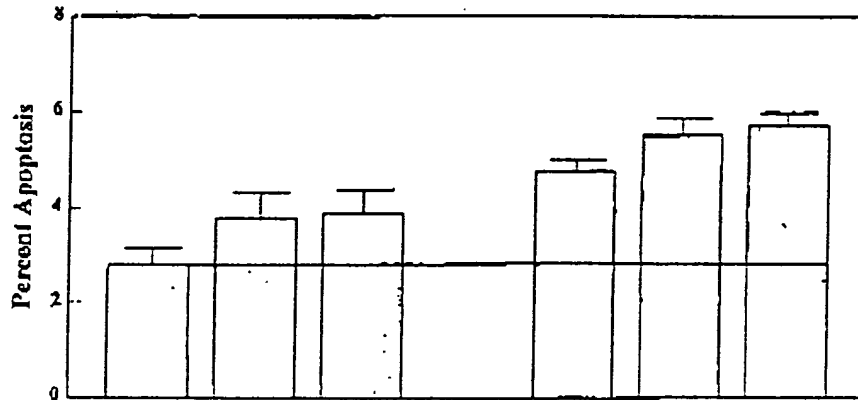
Irradiation	-	-	-	+	+	+
Tam 67	-	+	-	-	+	-
Null	-	-	+	-	-	+

C

Percent Apoptosis
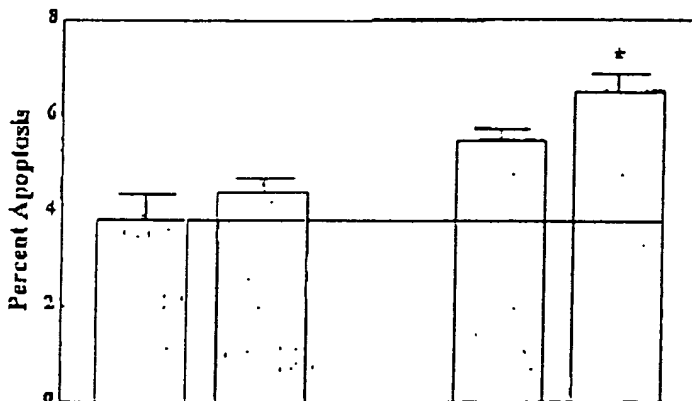
Irradiation	-	-	+	+
Tam 67	+	+	+	+
PD98059	-	+	-	+

Figure 12 A-B

A

B

Figure 13.

% ß-gal positive cells

MDA-Ad-LacZ

Multiplicity of infection
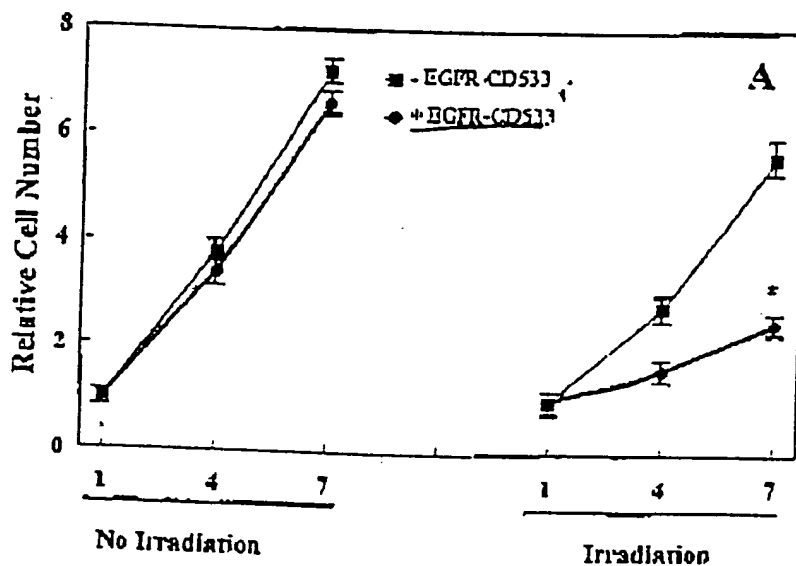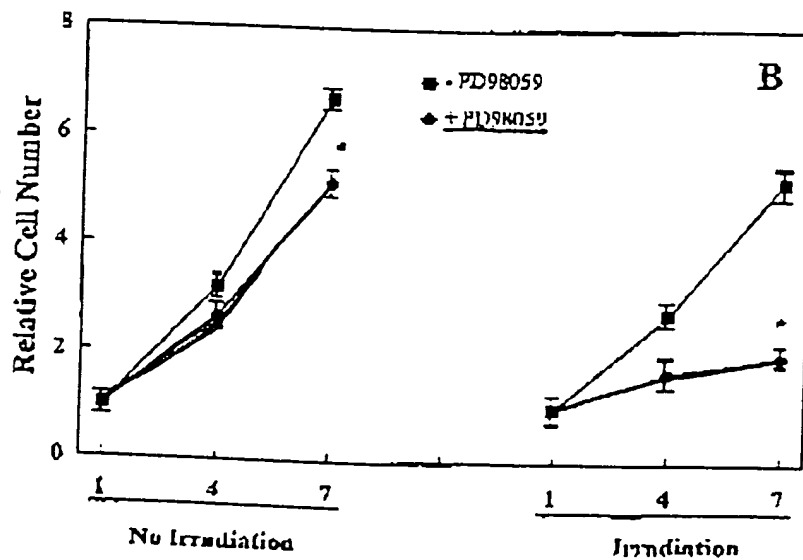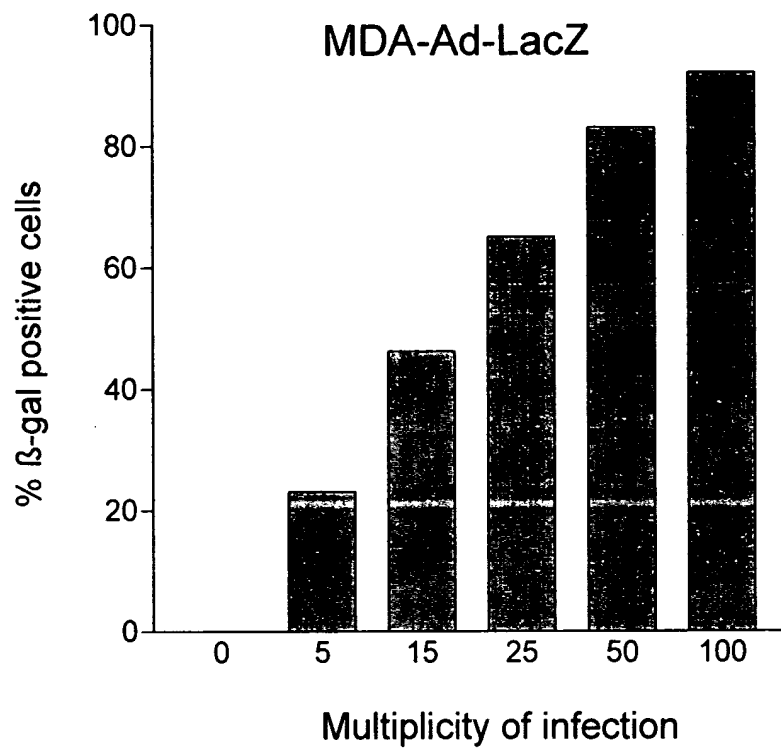
Figure 14

MDA-Ad-EGFR-CD533

Time (h)   0   24   48

← EGFR

← EGFR-CD533

Figure 15A-C

A

MDA

Time (min)	2 Gy		
	0	2	5	10

EGFR Tyr-P →

| Fold change | 1 | 2.5 | 1.4 | 1.2 |

B

MDA-Ad-LacZ

	2 Gy			EGF
	0	1	3	5	10	
	1	5.0	2.5	2.3	2.1	15.2

C

MDA-Ad-EGFR-CD533

	2 Gy			EGF
	0	1	3	5	10	
	1	1.1	0.8	0.8	1.0	4.1

Figure 16

Figure 17A+B

A

$\overline{D}$ ratio = 1.5

*P < 0.0001

Surviving fraction (log 10)

□ - Dox
◇ + Dox*

Dose (Gy)

B

$\overline{D}$ ratio = 1.4

*P < 0.0001

Surviving fraction (log 10)

□ MDA

△ MDA-AdLacZ

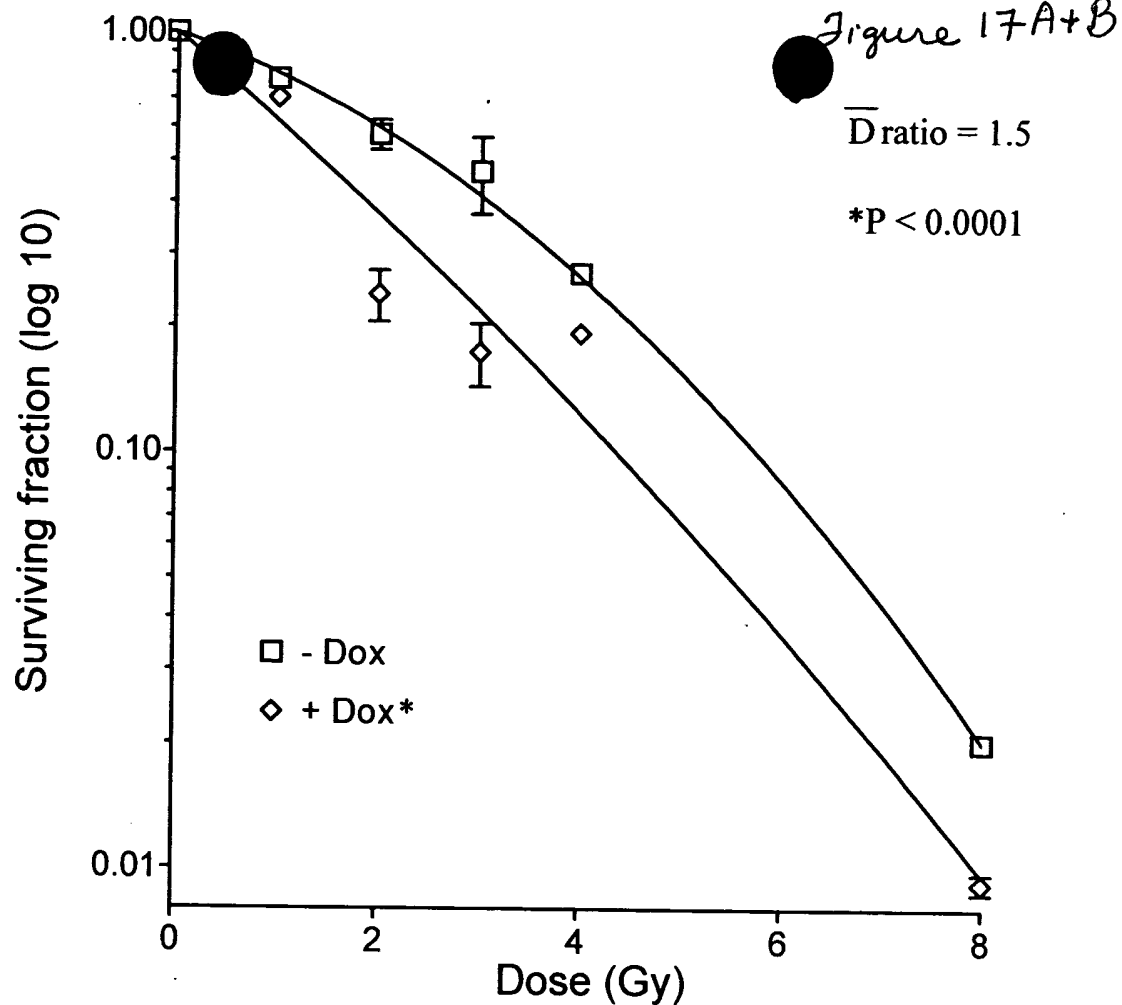◇ MDA-Ad-EGFR-CD533*

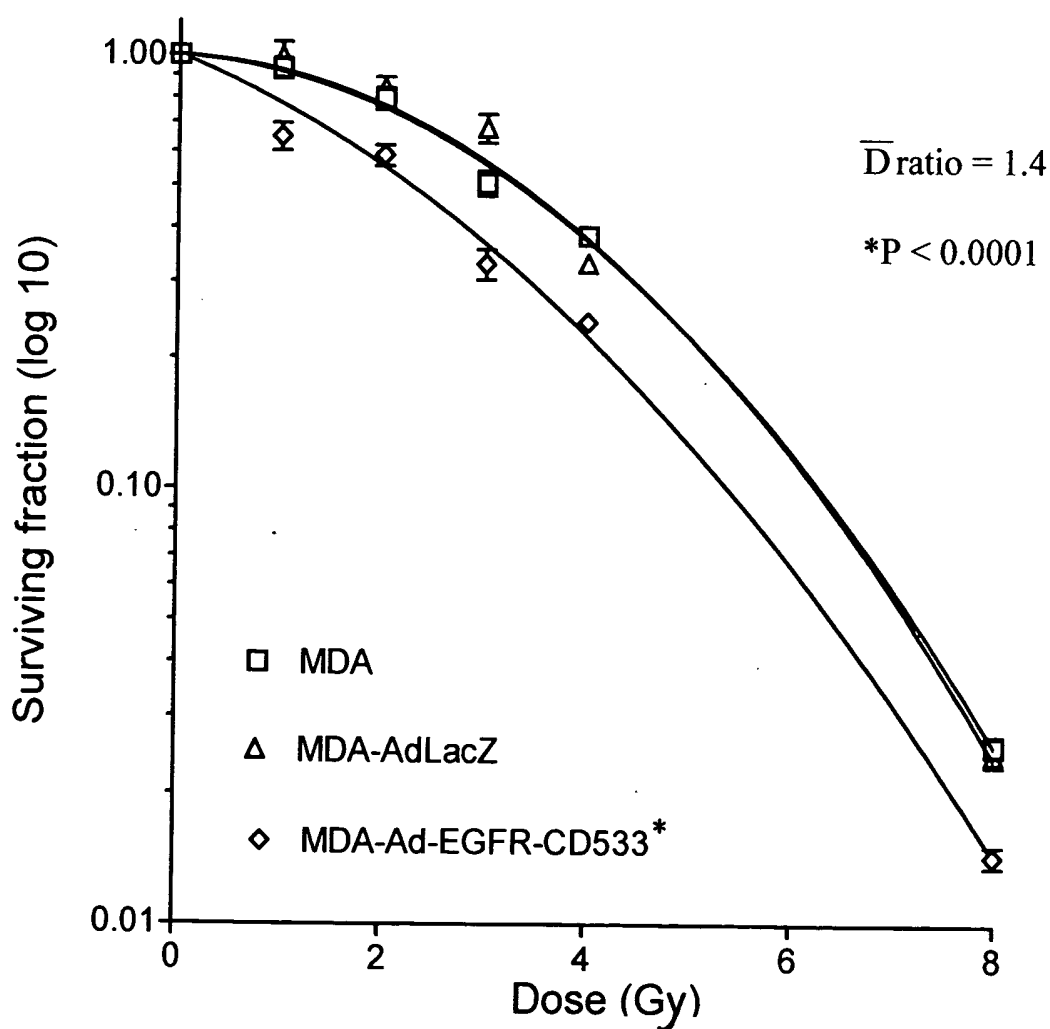Dose (Gy)
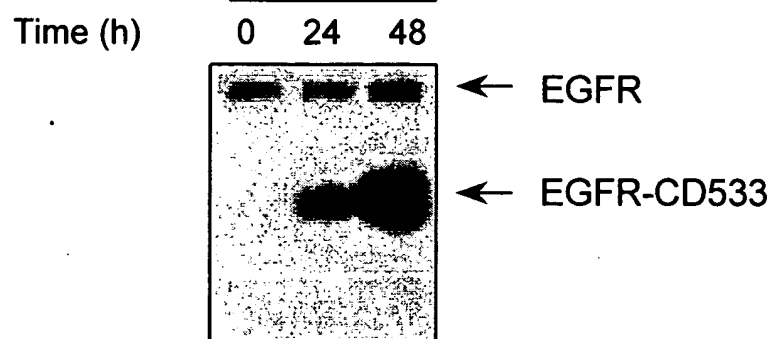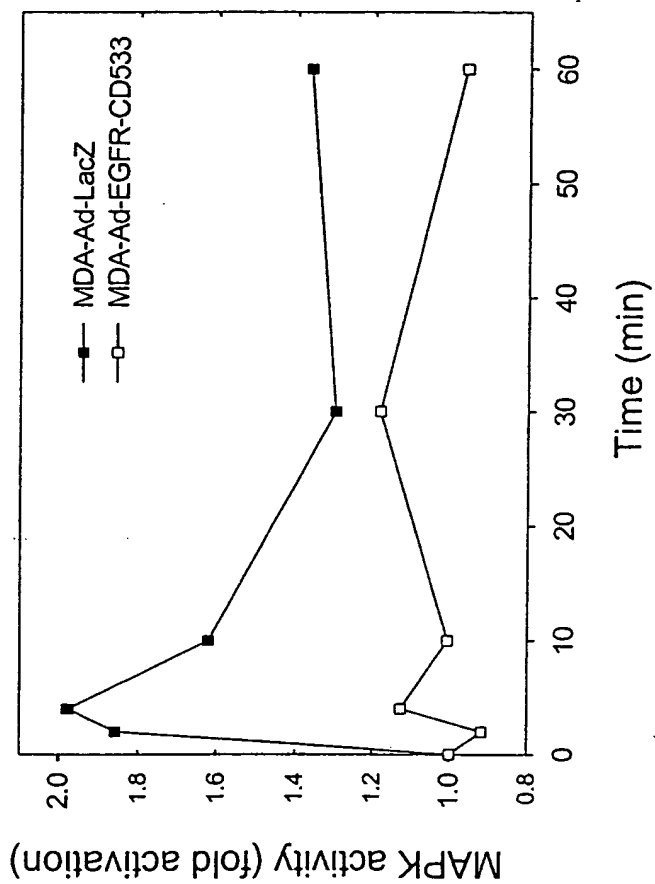
Figure 18A-B

A

4 Gy

Time (min)   0   2   5   10
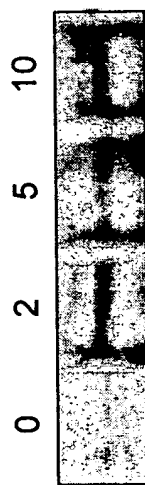
EGFR Tyr-P →

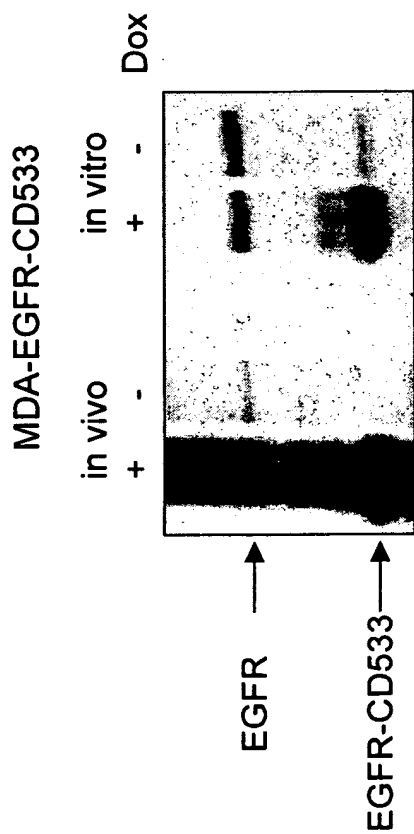Fold change   1.0   3.7 3.9 5.7

B

4 Gy

EGFR →

Time (min   0   2   5   10

Figure 19 A+B

A

MDA-EGFR-CD533

in vivo   in vitro

EGFR →

EGFR-CD533 →

| in vivo | | in vitro | |
| - | + | + | - | Dox |

B

MDA-EGFR-CD533
4 Gy, 10 min, in vivo

| - | + | Dox |

EGFR Tyr-P →

Fold change   1.0   0.34

EGFR →

Figure 20 A+B

A

B

MDA
in vivo in vitro

in vivo
in vitro

EGFRvIII →

EGFR

EGFR-CD533

Ad-EGFR-CD533

Ad-LacZ Ad-EGFR-
CD533

Figure 21

Figure 22

Day 1   Day 2   Day 4-6   Day 7

3 x 1.5 Gy   Tumor
                    Processing

Figure 23

MDA-EGFR-CD533 tumors
3 x 1.5 Gy

MDA tumors, Ad transduction in vivo
3 x 1.5 Gy

*P < 0.0001

relative survival

1.0
0.8
0.6
0.4
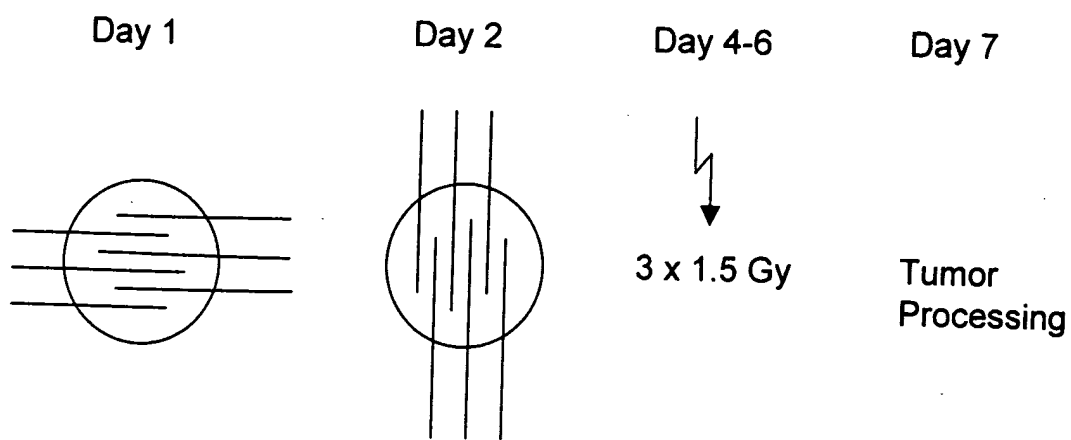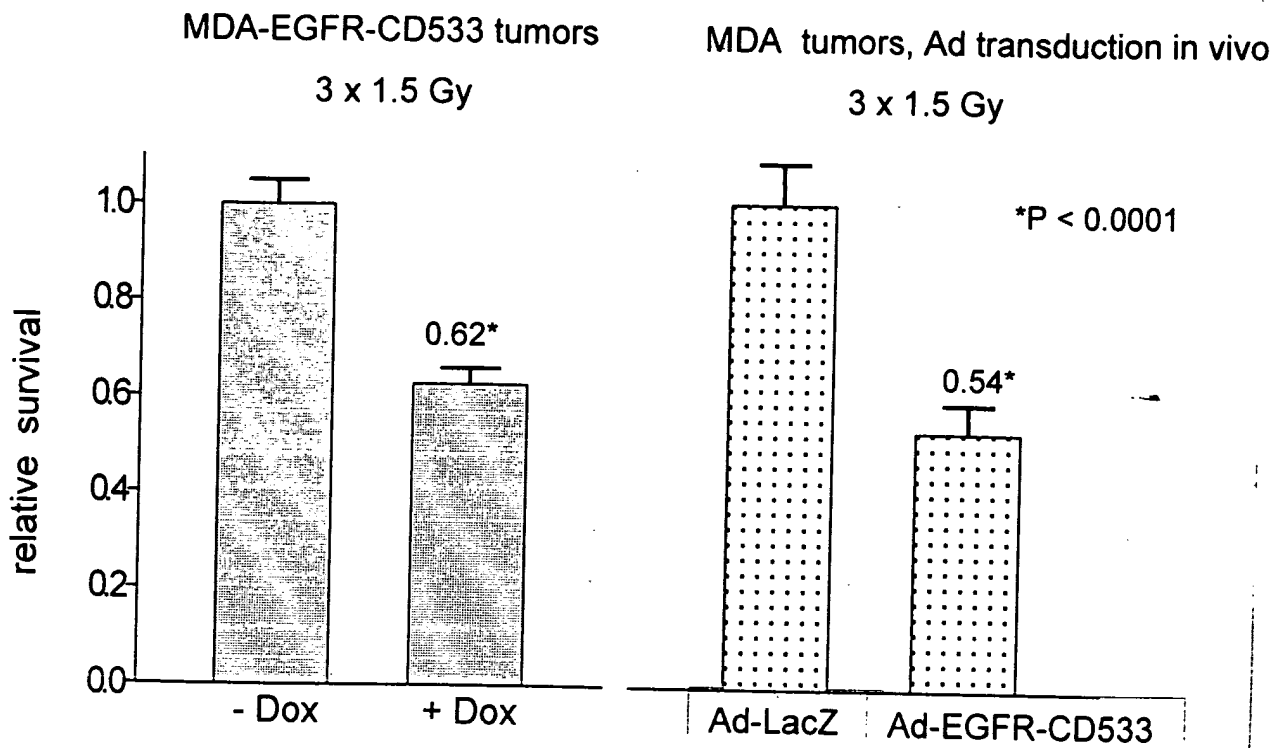0.2
0.0

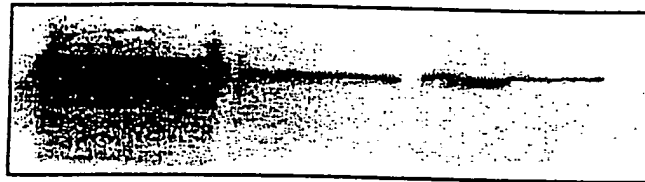0.62*

0.54*
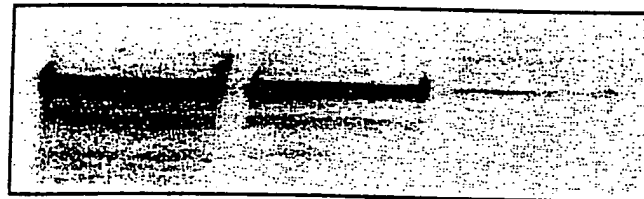
- Dox   + Dox

Ad-LacZ   Ad-EGFR-CD533

Figure 24

A-431   U-373 MG   U-87 MG

ErbB-1 →

ErbB-2 →

A.

U-87 MG

U-373 MG
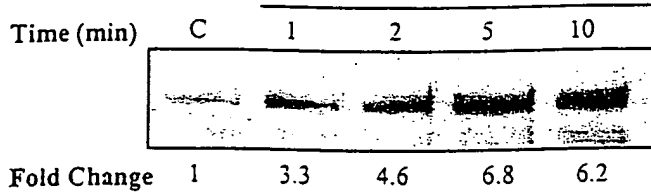
Rad (2 Gy)

Rad (2 Gy)

Time (min)	C	1	2	5	10	15	20

Fold Change	1	1.1	2.3	1.4	3.0	2.8	2.5
		± 0.1	± 0.3	± 0.2	± 0.7	± 0.2	± 0.3

Time (min)	C	1	2	5	10

Fold Change	1	3.4	2.7	1.6	1.5
		± 0.4	± 0.3	± 0.1	± 0.2

B.

U-87 MG

U-373 MG

EGF (10 ng/ml)

EGF (10 ng/ml)

Time (min)	C	1	2	5	10
Fold Change	1	3.3	4.6	6.8	6.2

	C	1	2	5	10
	1	3.4	4.0	4.5	4.8

Figure 26

Figure 26

Figure 27

A

B

U-87-AdLacZ

Time (min)	C	Rad (2 Gy)			
		1	2	5	10
Fold Change	1	1	2.3	1.8	3.4

U-87-EGFR-CD533

	C	Rad (2 Gy)			
		1	2	5	10
	1	1.2	0.9	1.1	0.9

U-373-AdLacZ

Time (min)	C	Rad (2 Gy)			
		1	2	5	10
Fold Change	1	4.0	3.6	4.0	2.2

U-373-EGFR-CD533

	C	Rad (2 Gy)			
		1	2	5	10
	1	0.9	1.0	0.9	1.0

Figure 28

(10 MOI)　　　　　　　(3 MOI)

U-87-AdLacZ　U-87-EGFRCD533　U-373-AdLacZ　U-373-EGFR-CD533
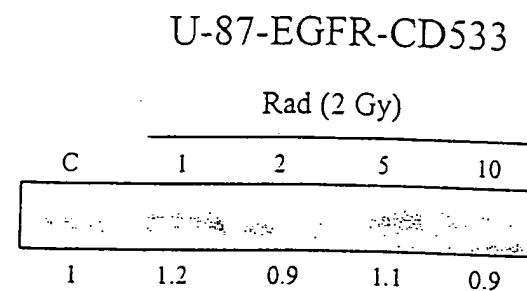
A ⟵ EGFR P-Tyr ⟶

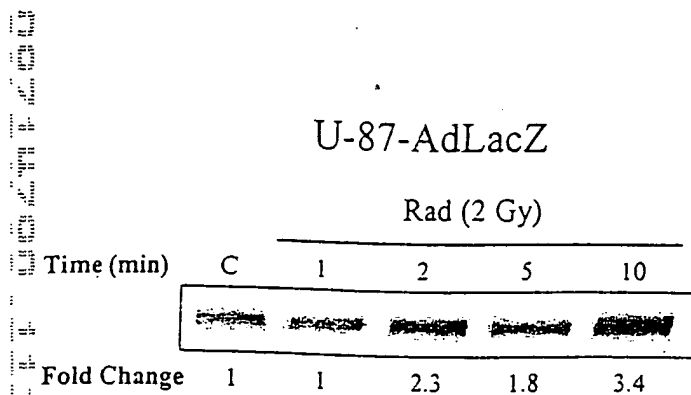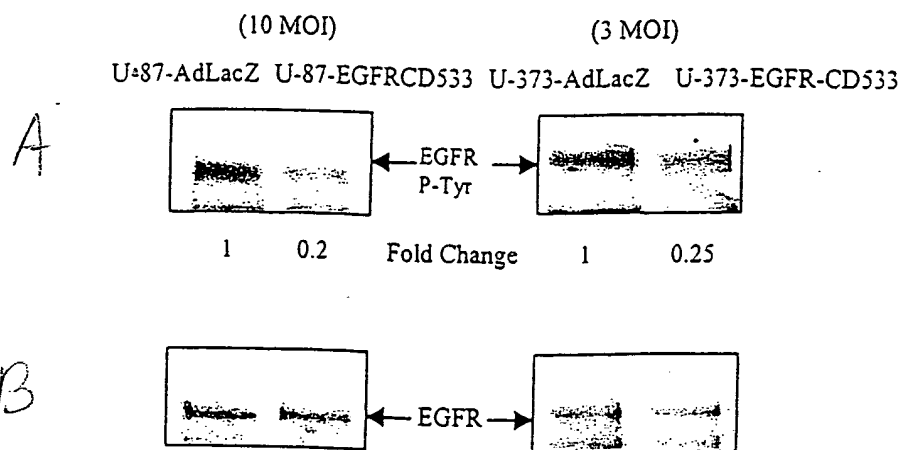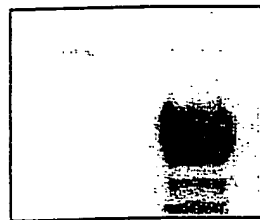　　1　　　0.2　　Fold Change　　1　　　0.25

B ⟵ EGFR ⟶

Figure 29 A-B

A

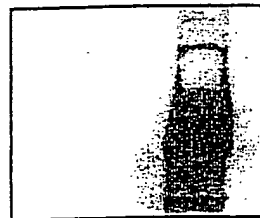U-87-AdLacZ   U-87-EGFR-CD533 (10 MOI)

← EGFR

← EGFR-
CD533

B

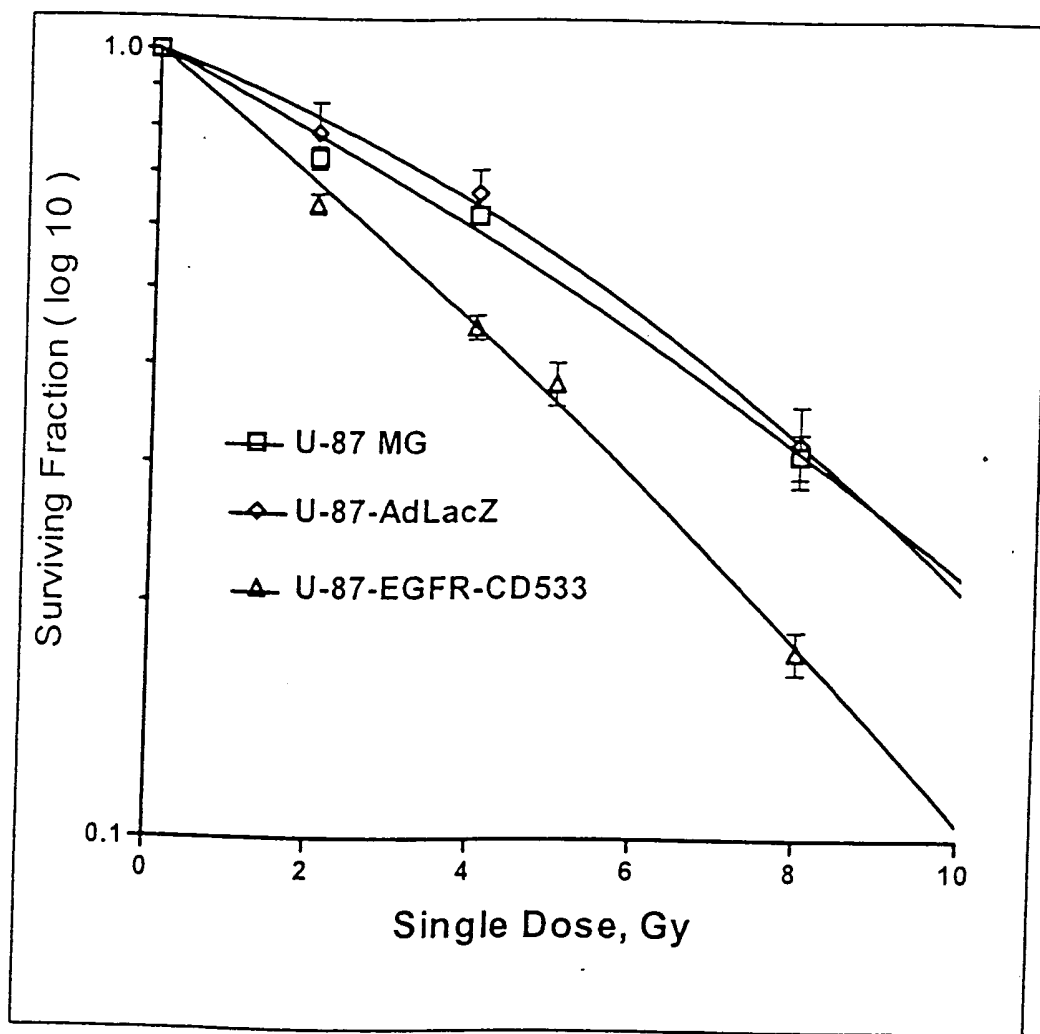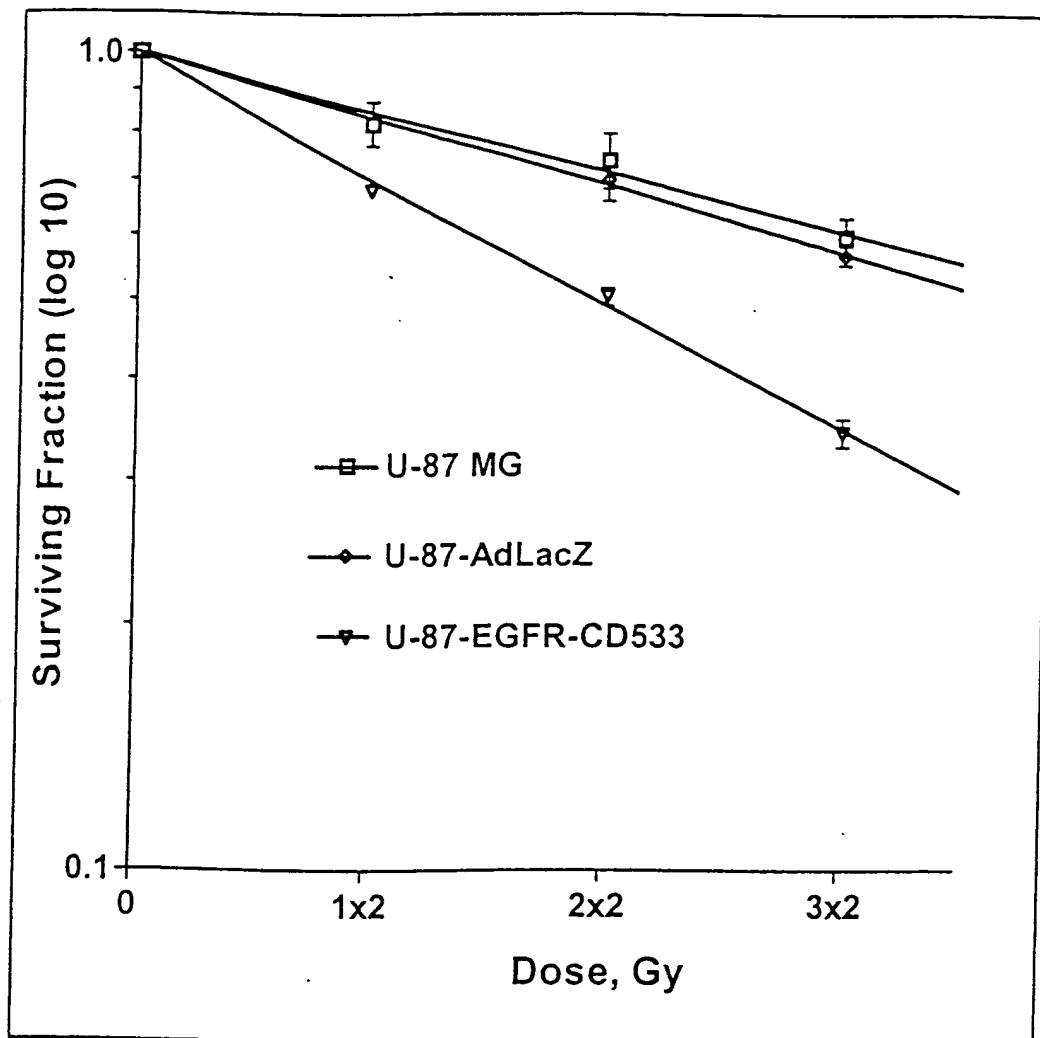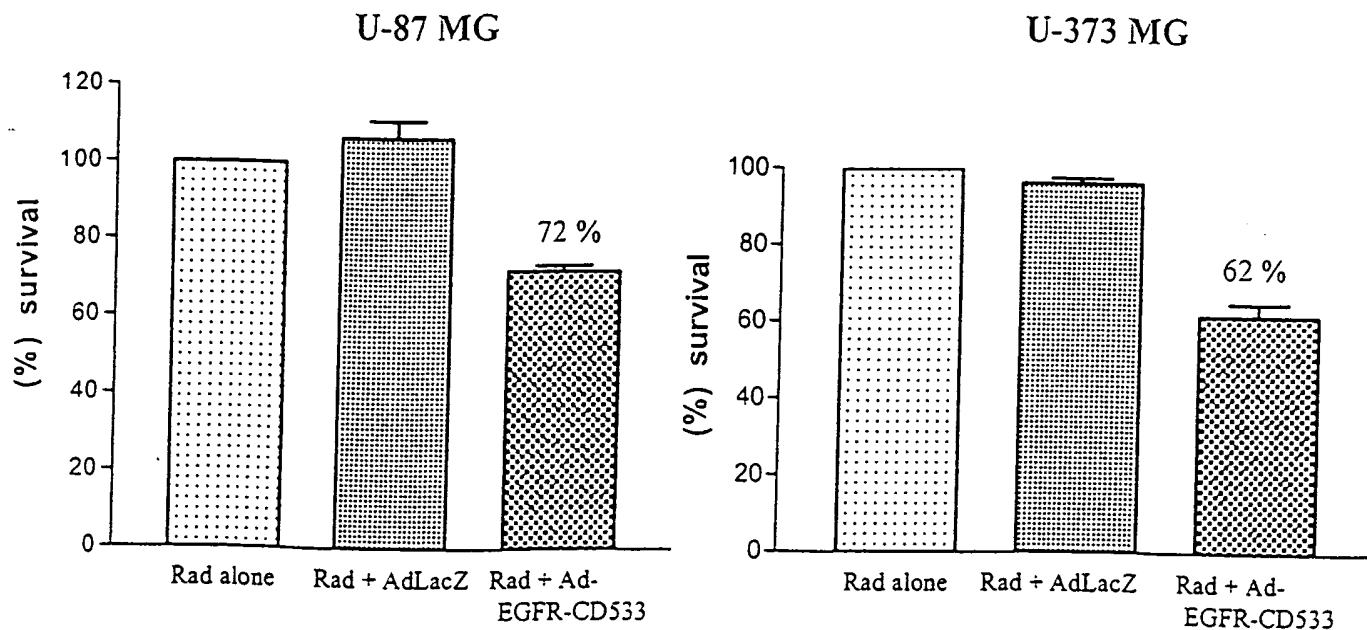U-373-AdLacZ U-373-EGFR-CD533 (3 MOI)

← EGFR

← EGFR-
CD533

Figure 30

Figure 31

Figure 32

Figure 33

U-87 MG Tumor Xenografts

3 x 3 Gy Rad

56 %